ABSTRACT

Electronic damping may be provided to an electrostatic positioner by developing a signal proportional to the velocity of the movable positioner plate and then changing the voltage applied to the positioner in proportion to this velocity signal to oppose the velocity of the movable plate. This velocity signal is obtained by subtracting from a first voltage proportional to the total current through the positioner a second voltage proportional to the current through the static capacitance of the positioner. The first voltage is obtained by a resistor in series with the positioner. The second voltage is not obtainable directly but is equal to a third voltage synthesized by a model impedance comprising a capacitor and a resistor in series having the same impedance and RC time constant as that of the positioner static capacitance and the resistor in series with the positioner where both resistor and capacitance are energized by the voltage driving the positioner.